

PUMPING SYSTEM OPTIMIZATION

December 9, 2014

7:30 am until 4:30 pm

**The Owyhee
1109 Main Street
Boise, ID 83702**

Registration Fee: \$139

0.7 Continuing Education Units through Washington State University may be made available for this training

Class size is limited to 25 attendees

Key Learning Objectives

- Identify benefits of optimization and assessment
- Determine optimization and assessment objectives
- Identify data necessary for assessment and what to measure
- Analyze data collection
- Develop recommendations and implement them
- Monitor the results of the improvement

Who Should Attend

- Irrigation operators and pump system managers
- Operation supervisors and managers
- Plant and process engineers
- Industrial maintenance personnel
- Efficiency organizations and utility staff

Agenda

7:30 Registration (breakfast provided)

8:00 Morning Session

- Introduction
- Why efficient pumping systems are important
- System optimization and improvement opportunities
- Basic pump system interaction
- Screening pumping system

11:30 Lunch (provided)

12:30 Afternoon Session

- Analysis tools for pumping systems
- Improving the performance of pumping systems

2:00 Break

2:15 Afternoon Session Continued

- Life-cycle cost analysis
- Developing an action plan
- Next steps and available resources

4:15 Summary and Evaluation

4:30 Adjourn

Attendees are asked to bring a basic calculator to training

Course Description: Did you know that the average pumping system efficiency is 40% or less? When pumping systems are not optimized for best efficiency, they will drain your company's profitably with higher energy and maintenance costs, shorter mean time between repairs, more CO₂ emissions and a less reliable system overall. The typical medium-sized plant spends over \$1.4 million a year on energy to run their pumping systems. Better system design and optimized pumping systems may result in savings that will average \$350K per year on energy alone. In addition, 4,436 tons of CO₂ emissions may be avoided by implementing the systems optimization concepts discussed during this course. For irrigation users, the class can show how to lower header pressures without throttle valves and explore ways to modify pumps by trimming the impeller. The course will show how the variable speed drive can save additional power by slowing down the pump speed, which will save energy and reduce cost in the process. With the system running more efficiently, maintenance and operating costs will go down and the mean time between repairs will improve. With these savings opportunities, isn't it time to find out how much your pumping systems are costing you?

Instructor: Ray Hardee, PE was one of the principle founders of Engineered Software and is also co-owner and Chief Engineer. Prior to establishing Engineered Software, Hardee had over 13 years in the power generation industry. Hardee graduated with honors from the United States Merchant Marine Academy in Kings Point, NY. Upon graduation, Hardee became an officer in the U.S. Naval Nuclear Power program and qualified submarines. Hardee has contributed dozens of articles and papers to various magazines and standards publications and has given over a thousand presentations on fluid piping around the world.

Hosting Sponsor



Co-Sponsoring Organizations



This training is provided by Pump Systems Matter. For more information: www.pumpsystemsmatter.org

The Northwest Regional Industrial Training project is coordinated and funded by the Northwest Energy Efficiency Alliance (NEEA), a private non-profit organization funded by Northwest utilities, the Energy Trust of Oregon, and Bonneville Power Administration. NEEA and its stakeholders subsidize up to 85% of the cost to attendees, which means the cost listed on the front of this brochure is significantly less than the average price in the marketplace. NEEA works in collaboration with its stakeholders and strategic market partners to accelerate the sustained market adoption of energy-efficient products, technologies, and practices. NEEA's market transformation efforts address energy efficiency in homes, businesses, and industry.

How to Register

Registration deadline is December 2, 2014

Register online:

<https://www.regonline.com/151neea-industrialtraining>

Or phone, fax, email, or mail the registration form below to:

NEEA Industrial Training c/o Ecova
309 SW 6th Ave #1000
Portland, OR 97204

Payments using a purchase order may also be submitted by phone or fax using the numbers below.

Questions

Visit <http://neea.org/get-involved/calendar> or contact the training center at 888.720.6823 or industrial-training@industrial.neea.org

Registration Form – Please register me for the Pumping System Optimization training on 12/9/2014:

First Name	Last Name	Title	Phone/Fax
Company Name			E-mail Address
Utility Provider			
Address			Please indicate special diet needs:
			<input type="checkbox"/> Vegetarian
			<input type="checkbox"/> Other _____
Zip	City	State	
Participation approved by: _____			Supervisor e-mail
Supervisor name			

Payment Options

Please enclose a check with this registration form and mail to the above address.

If paying by purchase order please call 888-720-6823 or fax registration form to 503-525-4800.

Discount Code: _____ Purchase Order: _____

Cancellation Policy: Full refund of registration fee if attendance is cancelled by December 2nd; half refund thereafter.